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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,493	08/16/2001	Maurice W. Peterson	99CR098/KE	3675

7590 04/20/2007  
Rockwell Collins, Inc.  
Attention: Kyle Eppele  
M/S 124-323  
400 Collins Rd. NE  
Cedar Rapids, IA 52498

EXAMINER
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FILE, ERIN M

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/931,493

Applicant(s)

PETERSON ET AL.

Examiner

Erin M. File

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see Remarks, filed 10/2/2006, with respect to the rejection(s) of claim(s) 1-20 under Carney and Kafadar have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Salinger.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-18, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Salinger (U.S. Patent No. 6,252,912).

**Claims 1, 10**, Salinger discloses:

- a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal (col. 7, lines 7-10, col. 15, lines 30-31, discloses the modulator 12 of fig. 1 modulates the signal with a local oscillator, col. 5, lines 52-54, Salinger teaches that the modulation translates a baseband signal to a oscillator frequency);

- calibration circuitry coupled to the transmitter (fig. 1 shows predistortion circuitry coupled to modulator 12) and generating a phase error estimate of the transmitter as a function of an angle of intersection between a desired transmitter envelope and an actual transmitter envelope (col. 12, lines 41-59);
- predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, the predistortion circuitry receiving the source signal (fig. 1, 14, 20) and the phase error estimate of the transmitter as inputs and providing as an output the transmitter input signal as a function of the phase error estimate of the transmitter (col. 15, lines 35-54, fig. 1, output of 22).

**Claim 2,** Salinger further discloses wherein the calibration circuitry is configured to generate a gain error estimate of the transmitter as a function of variation in the actual transmitter envelope, and wherein the predistortion circuitry provides the transmitter input signal also as a function of the gain error estimate of the transmitter generated by the calibration circuitry (col. 5, lines 4-7).

**Claim 3, 12, 18,** Salinger further discloses the calibration circuitry is configured to determine semi-major and semi-minor axes of an elliptical transmitter waveform, and to generate the gain error estimate of the transmitter as a function of the determined semi-major and semi-minor axes (col. 12, lines 41-59).

**Claim 4, 7, 16,** Salinger further discloses the calibration circuitry is configured to determine a centroid of the actual transmitter envelope (col. 12, lines 41-59).

**Claim 5, 8,** Salinger further discloses the calibration circuitry is configured to estimate dc offsets in an in-phase component and a quadrature component of the source signal

as a function of the centroid of the actual transmitter envelope (col. 5, lines 4-7, col. 12, lines 41-59).

**Claim 6, 9, 17,** Salinger further discloses the predistortion circuitry is configured to provide the transmitter input as a function of the estimated dc offsets in the in-phase and quadrature components of the source signal (col. 5, lines 4-7).

**Claim 13,** Salinger further discloses determining a centroid of the actual transmitter envelope (col. 5, lines 4-7); and estimating dc offsets in an in-phase component and a quadrature component of the source signal as a function of the centroid of the actual transmitter envelope (col. 5, lines 4-7, col. 12, lines 41-59).

**Claim 14,** Salinger further discloses predistorting the source signal to generate the transmitter input signal further comprises generating the transmitter input signal also as a function of the estimated offsets in the in-phase and quadrature components of the source signal (col. 5, lines 4-7).

**Claim 15,** Salinger discloses:

- a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal (col. 7, lines 7-10, col. 15, lines 30-31, discloses the modulator 12 of fig. 1 modulates the signal with a local oscillator, col. 5, lines 52-54, Salinger teaches that the modulation translates a baseband signal to a oscillator frequency);
- calibration circuitry coupled to the transmitter (fig. 1 shows predistortion circuitry coupled to modulator 12) and generating a phase error estimate of the

transmitter as a function of an angle of intersection between a desired transmitter envelope and an actual transmitter envelope (col. 12, lines 41-59);

- a gain error estimate of the transmitter as a function of variation in the actual transmitter envelope (col. 5, lines 4-7), and a
- dc offset estimate in an in-phase component and a quadrature component of the source signal as a function of a centroid of the actual transmitter envelope (col. 12, lines 41-59);
- predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, (fig. 1, 14, 20) the predistortion circuitry receiving the source signal and at least one of the phase error estimate, the gain error estimate, and the dc offset estimate as inputs and providing as an output the transmitter input signal as a function of at least one of the phase error estimate, the gain error estimate, and the dc offset estimate (col. 15, lines 35-54, fig. 1, output of 22).

**Claim 20**, Salinger further discloses the calibration circuitry simultaneously generates at least two of the phase error estimate, the gain error estimate, and the dc offset estimate (col. 5, lines 4-7).

***Allowable Subject Matter***

4. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2611

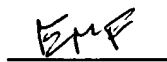
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is 5712726040.

The examiner can normally be reached on M-F 1-9:30PM.

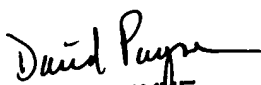
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 5712723024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File



4/12/2007



DAVID C. PAYNE  
SUPERVISORY PATENT EXAMINER